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Bellaterra : 17/09/15

File number : **15/10938-1734**

Petitioner reference : **TOPCRET TECNOLOGÍA EN REVESTIMENTOS, S.L.**
NIF: B-63700074
Gran Via de les Corts Catalanes, 828
08013 Barcelona

TEST REPORT

MATERIAL RECEIVED:

On 9 September 2015, a sample of 2 test tubes, 4x4x16cm, was received at Applus Laboratories, with the following reference according to the Petitioner:

BAXAB

TESTS REQUESTED:

SELF-LEVELLING MATERIAL FOR FLOORS, UNE-EN 13813:2014
1- Resistance to compression and bending, UNE-EN 13892-2:2003

DATE THE TESTS WERE CONDUCTED: **Between** 09/09/2015 and 16/09/2015.

RESULTS: See enclosed page

Manager of Construction Materials
LGAI Technological Center S.A.

Technical Manager
LGAI Technological Center S.A.

The results specified in this document relate only to the material received by Applus Laboratories and tested according to the indications given.

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Page 1 – This document consists of **2** pages of which **0** are annexes.

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TOPCRET TECNOLOGÍA EN REVESTIMIENTOS, S.L.		BAXAB

RESULTS:

1- Resistance to compression and bending, UNE-EN 13892-2:2003

Test tube	Age of breakage (days)	RESISTANCE TO BENDING		RESISTANCE TO COMPRESSION	
		Tension of breakage (N/mm ²)	Average value (N/mm ²)	Tension of breakage (N/mm ²)	Average value (N/mm ²)
1	28	7,4	7,6	15,00	16,1
				16,4	
2	28	7,7		16,4	
				16,6	

TYPES OF RESISTANCE TO COMPRESSION FOR SELF-LEVELLING MATERIAL UNE-EN 13813:2014													
Type	C5	C7	C12	C16	C20	C25	C30	C35	C40	C50	C60	C70	C80
Resistance to compression (N/mm ²)	5	7	12	16	20	25	30	35	40	50	60	70	80

TYPES OF RESISTANCE TO BENDING FOR SELF-LEVELLING MATERIAL UNE-EN 13813:2014													
Type	F1	F2	F3	F4	F5	F6	F7	F10	F15	F20	F30	F40	F50
Resistance to bending (N/mm ²)	1	2	3	4	5	6	7	10	15	20	30	40	50

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Bellaterra : 06 July 2015
File number : **14/8341-568M1**
Petitioner reference: : **TOPCRET TECNOLOGÍA EN REVESTIMENTOS, S.L.**
NIF: B-63700074
Gran Via de les Corts Catalanes, 828
08013 Barcelona

TEST REPORT

MATERIAL RECEIVED:

On 27 March 2014, Applus Laboratories received a sample of self-levelling floor (microcement) applied to different supports, with the following instructions from the petitioner:

BAXAB

TESTS REQUESTED:

SELF-LEVELLING FLOOR SCREED, UNE-EN 13813:2003

1. Determination of bond strength, UNE-EN 13892-8:2003
2. Determination of surface hardness, UNE-EN 13892-6:2003
3. Determination of liquid water permeability, UNE-EN 1062-3:2008
4. Determination of flexural properties, UNE-EN ISO 178:2003
5. Determination of resistance to impact, UNE-EN ISO 6272:2012
6. Determination of BCA wear resistance, UNE-EN 13892-4:2003
7. Determination of chemical resistance, UNE-EN 13529:2003

TEST DATES: From 27/3/2014 to 2/5/2014.

RESULTS: See attached pages.

Manager of Construction Materials
LGAI Technological Center S.A.

Technical Manager
LGAI Technological Center S.A.

The results specified in this document relate only to the material received by Applus Laboratories and tested according to the indications given.

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Page 1 – This document consists of **5** pages of which **0** are annexes.

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TOPCRET TECNOLOGÍA EN REVESTIMENTOS, S.L.	BAXAB

RESULTS:

1. Determination of bond strength, UNE-EN 13892-8:2003

Test tube no.	Tensile strength (N/mm ²)	Breakage
1	3.11	X
2	3.33	X
3	3.41	X
4	3.18	X
5	3.29	X
6	3.37	X
Average	3.3	

Breakage:

X: Breakage due to cohesion of support. Y: Breakage due to cohesion of mortar being tested.

X/Y: Breakage between support and mortar being tested.

TENSILE STRENGTH CLASSES FOR SELF-LEVELLING MORTARS					
Class	B 0.2	B 0.5	B 1.0	B 1.5	B 2.0
Tensile Strength N/mm ²	0.2	0.5	1.0	1.5	2.0

2. Determination of surface hardness, UNE-EN 13892-6:2003

Test tube no.	Depth of indentation (t) (mm)	SH = SURFACE HARDNESS (N/mm ²)
1	0.14	114
2	0.12	133
3	0.14	114
	Average	120

SURFACE HARDNESS FOR SELF-LEVELLING MORTARS							
Class	SH30	SH40	SH50	SH70	SH100	SH150	SH200
Surface Hardness N/mm ²	30	40	50	70	100	150	200

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3. Determination of liquid water permeability, UNE-EN 13892-3:2003

Test tube no.	W (Kg/m ² h ^{0.5})
1	0.01
2	0.01
3	0.01
Average	0.01

Classification according to liquid water transmission rate		
Class		Liquid water transmission rate (W) Kg/(m ² * h ^{0.5})
I (W ₁)	High	>0.5
II (W ₂)	Medium	From 0.1 to 0.5
III (W ₃)	Low	<0.1

* Classification according to Standard EN 1602-3 and EN 1602-1.

4. Determination of flexural properties, UNE-EN ISO 178:2003

Test tube no.	Flexural modulus of elasticity (kN/mm ²)	Tension (MPa)
1	1,25	9,0
2	1,33	10,2
3	1,25	10,1
4	1,31	10,3
5	1,21	9,6
Average	1,3	9,8

CLASSES OF FLEXURAL MODULUS OF ELASTICITY FOR SELF-LEVELLING MORTARS							
Class	E1	E2	E5	E10	E15	E20	Greater multiples of 5
Modulus of elasticity kN/mm ²	1	2	5	10	15	20	25-30, etc.

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5. Determination of resistance to impact, UNE-EN ISO 6272:2012

Surface impacts were performed using a spherical-tipped head with a diameter of 20 mm and a free mass of 1000g.

Fall height at which fissures were first observed	> 1500 mm*
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* Cracks were not yet observed at this height.

Diameter of footprint produced at 1500 mm	9.5 mm
RI (resistance to impact) value for a height of 1500 mm	14.7 Nm

6. Determination of BCA wear resistance, UNE-EN 13892-4:2003

Test tube no.	BCA WEAR RESISTANCE (μm)
1	30
2	30
3	30
Average	30

CLASSES OF BCA WEAR RESISTANCE FOR SELF-LEVELLING MORTARS					
Class	AR6	AR4	AR2	AR1	AR0.5
Maximum depth of wear (μm)	600	400	200	100	50

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7. Determination of chemical resistance, UNE-EN 13529:2003

The exposure time of agents on the product was 6 hours, 1, 3 and 7 days. The list of products used is as follows:

Chemical agent	Observations after 6 hours, 1, 3 and 7 days in contact with the product:
Chlorine	After 7 days in contact with the product, NO defects were observed in the test tubes used (blistering, flaking, cracking, loss of colour, etc.)
Olive oil	After 1 day in contact with the product, NO defects were observed in the test tubes used (blistering, flaking, cracking, loss of colour, etc.). After 7 days, slight colour variations were observed.
Alcohol	
Bleach	
Viakal	
Alcohol vinegar	After 6 hours in contact with the product, NO defects were observed in the test tubes used (blistering, flaking, cracking, loss of colour, etc.). After 1 day, colour variations were observed. After 3 and 7 days a greater loss of colour was observed.
Lime juice	

It should be noted that different commonly-used products can contain different ingredients and can therefore produce different results in other concentrations of more aggressive agents.

Service Quality Guarantee

Applus+ guarantees that this job was carried out in accordance with the requirements of our System of Quality and Sustainability and complies with the applicable contractual conditions and legal regulations. As part of our improvement programme, we would appreciate any feedback you may wish to give us by contacting either the manager having signed this document or the Applus+ Quality Manager at satisfaccion.cliente@appluscorp.com.

SIMPLIFIED TEST CERTIFICATE

Nr. 14/8341-568-S

Bellaterra, 6 May 2014

<p>TOPCRET TECNOLOGÍA EN REVESTIMENTOS, S.L. NIF: B-63700074 Gran Vía de les Corts Catalanes, 828 08013 Barcelona</p>	<p>BAXAB</p>
<p>POLYMER-BASED SELF-LEVELLING FLOOR SCREED, UNE-EN 13813:2003.</p>	<p>Results</p>
<p>1. Determination of bond strength, UNE-EN 13892-8:2003</p>	<p>>3.3 N/mm²</p>
<p>2. Determination of surface hardness, UNE-EN 13892-6:2003</p>	<p>120 N/mm²</p>
<p>3. Determination of liquid water permeability, UNE-EN 1062-3:2008</p>	<p>0.01 kg/m² h^{0.5}</p>
<p>4. Determination of flexural properties, UNE-EN ISO 178:2003</p>	<p>1.3 kN/mm²</p>
<p>5. Determination of resistance to impact, UNE-EN ISO 6272:2012 Fall height at which first cracks were observed and diameter produced at this height:</p>	<p>>14.7 Nm NO defects at 1500 mm Crater diameter: 9.5 mm</p>
<p>6. Determination of BCA wear resistance, UNE-EN 13892-4:2003</p>	<p>30 µm</p>
<p>7. Determination of chemical resistance, UNE-EN 13529:2003</p>	<p>No defects after 7 days for chlorine</p>
	<p>No defects after 1 day for bleach, olive oil, Viakal and vinegar</p>
	<p>No defects after 6 hours for lime juice</p>

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 LGAI Technological Center S.A.

Technical Manager
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<p>6. Determination of BCA wear resistance, UNE-EN 13892-4:2003</p>	<p>30 µm</p>
<p>7. Determination of chemical resistance, UNE-EN 13529:2003</p>	<p><i>No defects after 7 days for chlorine</i></p>
	<p><i>No defects after 1 day for bleach, olive oil, Viakal and vinegar</i></p>
	<p><i>No defects after 6 hours for lime juice</i></p>

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